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EXAMINER	
ZHANG, FAN	
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4157	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/697,806	DALTON ET AL.	
	Examiner	Art Unit	
	FAN ZHANG	4157	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-29* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-29* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *Oct 30, 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *10/30/2003*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraph of 35 U.S.C. 102 (e) that forms the basis for the rejections under this section made in this office action:

A person shall be entitled to a patent unless --

> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 28 and 29 are rejected under 35 U.S.C. 102(e) as being anticipated by US Patent No.: 7,148,922 by Shimada.

Regarding claim 28, Shimada teaches:

A method for compensating captured images [column 1, lines 60-62], the method comprising the steps of:

determining a difference between a strobed image data and a nonstrobed image data [column 7, lines 10-12, 22-30];

white balance compensating the difference using a first white balance compensation value corresponding to supplemental illumination provided by a supplemental illumination source [column 7, lines 43-47; column 5, lines 48-50];

white balance compensating the nonstrobed image data using a second white balance compensation value corresponding to ambient light [column 7, lines 47-52; column 5, lines 50-58]; and

combining the difference to the nonstrobed image white balance compensated using the second white balance compensation value [column 7, lines 52-53].

Regarding claim 29, the rationale provided in the rejection of claim 28 is incorporated herein. Shimada further teaches:

The method of claim 28, further comprising the steps of:

capturing a strobed image with the supplemental illumination; generating the strobed image data from the strobed image [column 7, lines 8-10; column 8, lines 4-14]; capturing a nonstrobed image without the supplemental illumination; and generating the nonstrobed image data from the strobed image [column 7, lines 7-8, lines 63-67; column 8, lines 1-4].

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. Claims 1-3, 5-13, 15, 17-23, and 25-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shimada (US Patent: 7,148,922).

Regarding claim 1, Shimada teaches:

A system which compensates captured images [column 1, lines 60-62] comprising:

a photosensor [Image pick-up device 3, fig. 1] that captures a nonstrobed image under an ambient lighting condition and captures a strobed image illuminated with supplemental illumination [column 5, lines 59-65];

an illumination source actuated to provide the supplemental illumination [column 4, lines 58-63]; and

a processor [CPU 8, fig. 1]

configured to generate a strobed image data corresponding to the strobed image [column 7, lines 8-10] and a nonstrobed image data corresponding to the nonstrobed image [column 7, lines 7-8; column 5, lines 56-58],

configured to white balance compensate the strobed image data using a first white balance compensation value corresponding to the supplemental illumination [column 7, lines 43-47; column 5, lines 48-50],

configured to determine a difference between the strobed image data and the nonstrobed image data [column 7, lines 10-12, 22-30],

configured to white balance compensate the nonstrobed image data using a second white balance compensation value corresponding to the ambient lighting conditions [column 7, lines 47-52; column 5, lines 50-58], and

configured to add the difference to the nonstrobed image data compensated using the second white balance compensation [column 7, lines 52-53].

Shimada achieved the functionally equivalent result as the claimed invention for compensating strobed data with the first white balance value and nonstrobed data with the second white balance value in a captured image. Shimada does not compensate strobed and nonstrobed data with the first white balance value before determining the difference between them. Instead, Shimada determines the difference between strobed and nonstrobed data first, then directly extracts and compensates strobed data with the first white balance value and compensate the rest nonstrobed data with the second white balance value [fig. 6A, 6B, and 6C; column 10, lines 38-67; column 11, lines 1-38]. Therefore, switching the processing sequence for reaching the same result of compensating strobed and nonstrobed data with different white balance values would have been an obvious variation of Shimada's teaching to a skilled in the art.

Regarding claim 2 and 3, the rationale provided in the rejection of claim 1 is incorporated herein. Shimada further teaches:

The system of claim 1, wherein the supplemental illumination comprises a flash device [column 4, lines 60-63].

The system of claim 1, wherein the supplemental illumination comprises a strobe [column 4, lines 60-63].

Regarding claim 5, the rationale provided in the rejection of claim 1 is incorporated herein. Shimada further teaches:

The system of claim 1, wherein the system is a digital camera [column 4, lines 4-9].

Claim 6 prescribes method steps with corresponding elements of the system claim 1. Thus, the system claim would necessitate the steps as claimed. Therefore, claim 6 has been analyzed and rejected w/r to claim 1.

Regarding claim 7, the rationale provided in the rejection of claim 6 is incorporated herein. Shimada further teaches:

The method of claim 6, further comprising the step of generating a compensated image data corresponding to an image with dual white balance compensation [column 11, lines 14-17].

Regarding claim 8, the rationale provided in the rejection of claim 6 is incorporated herein. Shimada further teaches:

The method of claim 6, further comprising the steps of:

capturing the nonstrobed image without the supplemental illumination [column 7, lines 7-8]; and capturing the strobed image with the supplemental illumination [column 7, lines 8-10].

Regarding claim 9, the rationale provided in the rejection of claim 8 is incorporated herein. Shimada further teaches:

The method of claim 8, wherein the step of capturing is performed with an image capture device [column 4, lines 4-9].

Regarding claim 10, the rationale provided in the rejection of claim 8 is incorporated herein. Shimada further teaches:

The method of claim 8, further comprising the steps of: generating the strobed image data from the strobed image [C1 in fig. 6B]; and generating the nonstrobed image data from the strobed image [D in fig. 6B].

Regarding claim 11, the rationale provided in the rejection of claim 8 is incorporated herein. Shimada further teaches:

The method of claim 8, further comprising the step of providing the supplemental illumination when the strobed image is captured [column 5, lines 59-65].

Regarding claims 12 and 13, the rationale provided in the rejection of claim 11 is incorporated herein. Shimada further teaches:

The method of claim 11, wherein the step of providing the supplemental illumination further comprises the step of actuating a flash device [column 4, lines 58-63].

The method of claim 11, wherein the step of providing the supplemental illumination further comprises the step of actuating a strobe [column 4, lines 58-63].

Regarding claim 15, the rationale provided in the rejection of claim 11 is incorporated herein. Shimada further teaches:

The method of claim 11, wherein the step of capturing further comprises the steps of: first capturing the nonstrobed image; and then capturing the strobed image [column 7, lines 7-10].

Regarding claim 17, the rationale provided in the rejection of claim 6 is incorporated herein. Shimada further teaches:

The method of claim 6, further comprising the step of receiving the strobed image data and the nonstrobed image data from a memory [column 4, lines 28-36].

Regarding claim 18, the rationale provided in the rejection of claim 6 is incorporated herein. Shimada further teaches:

The method of claim 6, further comprising the step of specifying the first white balance compensation value corresponding to the supplemental illumination [column 5, lines 48-50].

Regarding claim 19, the rationale provided in the rejection of claim 6 is incorporated herein. Shimada further teaches:

The method of claim 6, further comprising the step of specifying the second white balance compensation value corresponding to the ambient light [column 5, lines 50-58].

Regarding claim 20, the rationale provided in the rejection of claim 6 is incorporated herein. Shimada further teaches:

The method of claim 6, further comprising the steps of: analyzing an ambient lighting condition; and selecting the second white balance compensation value corresponding to the ambient lighting condition [column 5, lines 50-58].

Regarding claim 21, the rationale provided in the rejection of claim 6 is incorporated herein. Shimada further teaches:

The method of claim 6, further comprising the steps of: analyzing a supplemental illumination condition; and selecting the first white balance compensation value corresponding to the supplemental illumination condition provided by the supplemental illumination source [column 5, lines 28-32].

Regarding claim 22, the rationale provided in the rejection of claim 6 is incorporated herein. Shimada further teaches:

The method of claim 6, further comprising the step of specifying the second white balance compensation value corresponding to illumination provided by another

illumination source [column 5, lines 54-58; column 6, lines 47-51].

Regarding claim 23, the rationale provided in the rejection of claim 6 is incorporated herein. Shimada further teaches:

The method of claim 6, further comprising the step of specifying the first white balance compensation value corresponding to illumination provided by the supplemental illumination source [column 5, lines 48-50].

Claim 25 has been analyzed and rejected w/r to claim 1.

Regarding claim 26, the rationale provided in the rejection of claim 25 is incorporated herein. Shimada further teaches:

The system of claim 25, further comprising means for capturing a strobed image corresponding to the strobed image data and capturing a nonstrobed image corresponding to the nonstrobed image data [column 5, lines 59-67; column 6, lines 1-11].

Claim 27 has been analyzed and rejected w/r to claim 1 in accordance with Shimada's further teaching on a computer-readable medium having a program for compensating images [column 5, lines 2-5].

5. Claims 16 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shimada (US Patent: 7,148,922) and in further view of Udagawa (US Patent: 6,982,753).

Regarding claim 16, the rationale provided in the rejection of claim 11 is incorporated herein. Although the short duration of time for image capturing is not expressly disclosed, such feature in Shimada would have been implied and expected (see column 7, lines 63-67 through column 8, lines 1-14). Specifically, Shimada does not emphasize the benefit of short duraction of time for image capturing as claimed. However, Udagawa does as follow:

The method of claim 11, wherein the step of capturing is performed with a sufficiently short duration of time between the capture of the strobed image and the nonstrobed image such that when the step of determining the difference results in no discernable image distortion caused by movement of at least one object [column 5, lines 58-67; column 6, lines 1-3].

The claimed feature is not precluded from Shimada's device although Shimada does not emphasize on it. Given Udagawa's further exemplification in the same field of endeavor, the claimed feature would have been obvious to a skilled in the art.

Regarding claim 24, the rationale provided in the rejection of claim 6 is incorporated herein. Shimada does not further teach scaling nonstrobed data by strobed/nonstrobed exposure time ratio. In the same field of endeavor, Udagawa teaches:

The method of claim 6, wherein the step of determining a difference further comprises the step of scaling the nonstrobed image data by the ratio of a strobed image exposure time to a nonstrobed image exposure time [column 6, lines 42-51].

Udagawa scales strobed image data using the ratio of amount of light emitted to nonstrobed image to amount of light emitted to strobed image. The claimed application scales nonstrobed image data using the ratio of strobed image exposure time to a nonstrobed image exposure time, which is another way to determine the ratio of amount of light emitted to strobed/nonstrobed image. And it would have been an obvious variation of Udagawa's teaching. Therefore, given Udagawa's prescription, modifying Shimada's teaching to include the ratio calculation for determining strobed or nonstrobed white balance value would have been obvious to a skilled in the art for providing more accurate light and color compensation to a strobed image.

6. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shimada (US Patent: 7,148,922) and in further view of Larkin et al (US Patent: 6,029,013).

Regarding claim 4, the rationale provided in the rejection of claim 1 is incorporated herein. Shimada does not teach a remote strobe. In the same field of endeavor, Larkin et al teaches:

The system of claim 1, wherein the supplemental illumination comprises a remote strobe [Abstract].

A remote strobe as supplemental illumination on an image capturing device has been well known and practiced in the art as indicated by Larkin et al. Therefore, modifying Shimada's teaching by adding a remote strobe would have been obvious to a skilled in the art for providing illumination on targets from any angle at desired location.

7. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shimada (US Patent: 7,148,922) and in further view of Battles (US Patent: 6,839,513).

Regarding claim 14, the rationale provided in the rejection of claim 11 is incorporated herein. Shimada does not teach capturing nonstrobed image after strobed image. In the same field of endeavor, Battles teaches:

The method of claim 11, wherein the step of capturing further comprises the steps of: first capturing the strobed image; and then capturing the nonstrobed image [column 1, lines 37-40; column 3, lines 1-10].

Battles teaches a camera that takes two photos for a single shut with first photo using settings specified by user and the second one set automatically by the camera. It is possible that the first photo is taken with strobe set on manually whereas the second one is taken with strobe set off automatically by the camera. Therefore, modifying Shimada's teaching with Battles' would have been obvious to a skilled in the art for eliminating mistakes from camera settings during picture taking.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Funston (US Pub: 2002/0118967) teaches an apparatus for use in ambient light with an archival capture media having a designated illuminant and a flash firing circuit that arms responsive to a mismatch between the color value and the designated illuminant.

Sakaguchi et al. (US Patent: 7,212,234) teaches a selector interface that selects among a plurality of predetermined values to set the white balance gain value in accordance with an imaging application.

Contact

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fan Zhang whose telephone number is ((571) 270-37510-3751. The examiner can normally be reached on Mon-Fri from 8:00-5:00. If attempts to reach the examiner by telephone are unsuccessful, the examiner's Supervisor, Vu Le can be reached on (571) 272-7332. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For

more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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